

Invalidity Claim Chart
in Support of
Oberthur's Summary Judgment Motion for Invalidity

U.S. Pat. No. 5,817,207

Reference Key:

- 1987 Oakwood Series 6 Brochure (“OS6B”)
- 1987 Oakwood Sales Brochure (“OSB”)
- 1991 Oakwood Series 6 Instruction Manual (“OIM”)
- Japanese Patent Application Publication H6-176214 (“JP ‘21”)
- Haghiri – Tehrani et al., U.S. Patent No. 4,450,024 (“ ‘024 patent”)
- Templeton, Jr. et al., U.S. Patent No. 5,519,201 (“ ‘201 patent”)
- Lyszczarz, U.S. Patent No. 4,897,533 (“ ‘533 patent”)
- Hida et al., U.S. Patent No. 4,841,134 (“ ‘134 patent”)

<u>Claims</u>	<u>Prior Art</u>	<u>Application of Prior Art</u>
	(prior art relied on by the Examiner is highlighted in yellow) (prior art providing duplicative teachings is labeled “cumulative”)	(prior art relied on by the Examiner is highlighted in yellow) (prior art providing duplicative teachings is labeled “cumulative”)

1. A process for incorporating at least one electronic element in the manufacture of a plastic card, comprising the steps of:	‘024 patent	“electronic element” – IC module 5 (Sharinn Ex. 14, ‘024 patent, col. 3, lines 10-11, Fig. 1; Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see</u> OCS_C_045587-92).
	1987 Oakwood Series 6 Brochure	“electronic element” – inductive codings or microchip (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration and text under heading “Machine Reading Applications”).
	<u>Cumulative</u> JP ‘214	<u>Cumulative</u> “Japanese Patent ‘214 taught a process for forming a smart

		card which included the steps of laminating with heat and pressure an assembly which included an IC chip 11 and a thin coil 12 (an antenna).” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).
<i>(a) providing first and second plastic core sheets;</i>	<p>‘024 patent</p> <p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> JP ‘214</p>	<p>“first and second plastic core sheets” – cover films 12, 13 (Sharinn Ex. 14, ‘024 patent, col. 3, lines 50-53; Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see</u> OCS_C_045587-92).</p> <p>“first and second plastic core sheets” - second opaque plastic layer and substrate beneath inductive codings (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).</p> <p><u>Cumulative</u> “The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p>
<i>(b) positioning said at least one electronic element in the absence of a non-electronic carrier directly between said first and second plastic core sheets to form a core, said plastic core sheets defining a pair of inner and outer surfaces of said core;</i>	<p>‘024 patent</p> <p>1987 Oakwood Series 6 Brochure</p>	<p>“positioning ...” – IC module 5 (placed in carrier element 6) is illustrated as being positioned between cover films 12, 13 (Sharinn Ex. 14, ‘024 patent, Fig. 2a; Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see</u> OCS_C_045587-92).</p> <p>“positioning ...” – inductive codings are illustrated as being positioned between second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).</p>

	1987 Oakwood Series 6 Brochure	“in the absence of a non-electronic carrier” – inductive codings are illustrated with no protection (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“directly” – inductive codings are in immediate physical contact with second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	<u>‘024 patent</u>	“core” – cover films 12, 13 and IC module 5 form the “core” (Sharinn Ex. 14, ‘024 patent, Fig. 2a; Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see</u> OCS_C_045587-92).
	1987 Oakwood Series 6 Brochure	“core” – second opaque plastic layer, inductive codings and substrate form the “core” (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“a pair of inner and outer surfaces of said core” – outside surface of second opaque plastic layer and outside surface of substrate are illustrated (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	<u>Cumulative</u> JP ‘214	<u>Cumulative</u> “The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).
<i>(c) positioning said core in a laminator apparatus, and subjecting said core to a heat</i>	<u>‘024 patent</u>	“positioning said core in a laminator apparatus” – “FIGS. 2a and 2b show the first

	<p>1987 Oakwood Sales Brochure</p> <p><u>Cumulative</u> JP '214</p>	<p>63-65; Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see</u> OCS_C_045587-92).</p> <p>“heating said core for a first period of time” – “P.V.C. Temp.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).</p> <p><u>Cumulative</u> “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP '214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p>
<p><i>(ii) applying a first pressure to said core for a second period of time such that said at least one electronic element is encapsulated by said core;</i></p>	<p><u>'024 patent</u></p> <p>1987 Oakwood Sales</p>	<p>“applying a first pressure ... for a second period of time” – “The laminating pressure will thus be increased as a function of the temperature ..., but on the other hand the carrier element is subjected to the full laminating pressure in the final phase of the laminating process, after the card layers have softened. By use of the method of controlling the laminating pressure as a function of the temperature, integrated circuits can be embedded in identification cards undangerously, without any need of additional measures.” (Sharinn Ex. 14, '024 patent, col. 6, lines 37-46; Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see</u> OCS_C_045587-92).</p> <p>“applying a first pressure ... for</p>

	<p>Brochure</p> <p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> JP '214</p>	<p>a second period of time” – “P.V.C. Press.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6 <u>see</u> diagram).</p> <p>“electronic element is encapsulated by said core” – during lamination inductive codings are enclosed by second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).</p> <p><u>Cumulative</u> “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP '214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p>
<p>(iii) cooling said core while applying a second pressure to said core,</p>	<p>'024 patent</p>	<p>“cooling ... while applying a second pressure” – “In the cold state the carrier element 27 is hardly affected by the pressure of the laminating plate” (Sharinn Ex. 14, '024 patent, col. 5, lines 33-35; Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see</u> OCS_C_045587-92); “The laminating pressure will thus be increased as a function of the temperature ..., but on the other hand the carrier element is subjected to the full laminating pressure in the final phase of the laminating process, after the card layers have softened. By use of the method of controlling the laminating pressure as a function of the temperature, integrated circuits</p>

	1987 Oakwood Sales Brochure	<p>can be embedded in identification cards undangerously , without any need of additional measures.” (Sharinn Ex. 14, ‘024 patent, col. 6, lines 37-46; Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see</u> OCS_C_045587-92).</p> <p>“cooling ... while applying a second pressure” – “P.V.C. Temp.” and “P.V.C. Press.” curves of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).</p>
<i>(d) coating at least one of said outer surfaces of said core with a layer of ink; and</i>	<p>1991 Oakwood Instruction Manual</p> <p><u>Cumulative</u> ‘533 patent</p>	<p>Examiner indicated “Although the reference does not specify the application of a printing layer in the manner recited in the claim, absent any evidence to the contrary, it would have been obvious to one of ordinary skill in the art to apply any layer to those already present in the card during lamination, the application of a printing layer being considered exemplary.” (Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see</u> OCS_C_045587-92).</p> <p>“coating ... with a layer of ink” – “Combine some of these components with customized printed core and overlay materials” (Sharinn Ex. 12, OIM at 1 ¶ 1)</p> <p><u>Cumulative</u> “The backside of the substrate ... also has printed information thereon formed by a conventional offset lithography process, for example.” (Sharinn</p>

		Ex. 15, '533 patent, col. 3, lines 60-63).
<i>(e) applying a layer of overlamine film to at least one of said outer surfaces of said core.</i>	<p>'024 patent</p> <p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> 1991 Oakwood Instruction Manual</p> <p><u>Cumulative</u> JP '214</p>	<p>"overlamine film" – "The compound films used in this example as cover layers are polyester films (PETP) 32 and 40" (Sharinn Ex. 14, '024 patent, col. 5, lines 51-54; Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see</u> OCS_C_045587-92).</p> <p>"overlamine film" – bottom plastic opaque layer (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).</p> <p><u>Cumulative</u> Sharinn Ex. 12, OIM at 1 ¶ 1 ("Combine some of these components with customized printed core and overlay materials").</p> <p><u>Cumulative</u> "[T]he references as set forth above suggested the use of multiple films over the chip, for example Japanese Patent '214 suggested the use of multiple films 14 and 15 over the assembly." (Sharinn Ex. 6 and Ex. 24, JP '214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p>

<p>2. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said laminator apparatus has first and second laminating plates, at least one of said first and second laminating plates having a matte finish for creating a textured surface on at least one of said outer surfaces of said core.</p>	<p>1987 Oakwood Series 6 Brochure</p> <p>‘134 patent</p>	<p>Examiner indicated “As to the dependent claims regarding the various sequential pressures and other process parameters, these are considered within the purview of one of ordinary skill in the art and would depend upon the type of material being laminated.” (Sharinn Ex. 23, Office Action mailed 9/8/97, see OCS_C_045587-92).</p> <p>“first and second laminating plates” – “The card sets to be laminated are inserted between stainless steel laminating plates and inserted into the machine on the laminating tray.” (Sharinn Ex. 10, OS6B at 3).</p> <p>“at least one of said first and second laminating plates having a matte finish” – “[S]tainless steel plates 63a subjected to matte working by a sand matte were superposed thereon to carry out hot pressing As a result, a sheet for reinforcement 51 applied with matte working on both surfaces of the substrate 61 ... was obtained. Matte working can be applied on any desired surface by replacing the above stainless steel plates 63a with the desired plate.” (Sharinn Ex. 16, ‘134 patent, col. 12, lines 19-27).</p>
<p>3. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 2, wherein each of said first and second laminating plates has a matte finish for creating said</p>		<p>Examiner indicated “As to the dependent claims regarding the various sequential pressures and other process parameters, these are considered within the purview of one of ordinary skill in the art and would depend upon the type of material being</p>

<p><i>textured surface on both of said outer surfaces of said core.</i></p>	<p>‘134 patent</p>	<p>laminated.” (Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see</u> OCS_C_045587-92).</p> <p>“each of said first and second laminating plates has a matte finish” – “[S]tainless steel plates 63a subjected to matte working by a sand matte were superposed thereon to carry out hot pressing As a result, a sheet for reinforcement 51 applied with matte working on both surfaces of the substrate 61 ... was obtained. Matte working can be applied on any desired surface by replacing the above stainless steel plates 63a with the desired plate.” (Sharinn Ex. 16, ‘134 patent, col. 12, lines 19-27).</p>
<p><i>4. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said first and second plastic core sheets are made from a material selected from the group consisting of polyvinyl chloride, polyester, and acrylonitrile-butadiene-styrene, each of said sheets having a thickness in the range of 0.007 to 0.024 inch.</i></p>	<p>1987 Oakwood Series 6 Brochure</p> <p>‘533 patent</p>	<p>Examiner indicated “As to the recitations in the dependent claims regarding various types of materials, these are considered within the purview of one of ordinary skill in the art.” (Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see</u> OCS_C_045587-92).</p> <p>“polyvinyl chloride” – second opaque plastic layer and substrate beneath inductive codings are made of plastic (P.V.C.) (Sharinn Ex. 10, OS6B at 3, 4, <u>see</u> illustration).</p> <p>“thickness in the range of 0.007 to 0.024 inch” – unpatentable modification of prior art dimensions (“The plastic substrate 2 of the card is ... preferably PVC, with a thickness of 0.0265 inch.” (Sharinn Ex. 15, ‘533 patent,</p>

		col.4, lines 12-21)).
<p>5. <i>The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 4, wherein said first and second plastic core sheets have a thickness of approximately 0.0125 inch.</i></p>	<p>‘533 patent</p>	<p>Examiner indicated “As to the dependent claims regarding the various sequential pressures and other process parameters, these are considered within the purview of one of ordinary skill in the art and would depend upon the type of material being laminated.” (Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see OCS_C_045587-92</u>).</p> <p>“a thickness of approximately 0.0125 inch” – unpatentable modification of prior art dimensions (“The plastic substrate 2 of the card is ... preferably PVC, with a thickness of 0.0265 inch.” (Sharinn Ex. 15, ‘533 patent, col.4, lines 12-21)).</p>
<p>6. <i>The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said second pressure is greater than said first pressure.</i></p>	<p>1987 Oakwood Sales Brochure</p>	<p>Examiner indicated “As to the dependent claims regarding the various sequential pressures and other process parameters, these are considered within the purview of one of ordinary skill in the art and would depend upon the type of material being laminated.” (Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see OCS_C_045587-92</u>).</p> <p>“said second pressure is greater than said first pressure” – “P.V.C. Press.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see diagram</u>).</p>

<p>7. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 6, wherein said second pressure is at least approximately 25% greater than said first pressure.</p>	<p>1987 Oakwood Sales Brochure</p>	<p>Examiner indicated “As to the dependent claims regarding the various sequential pressures and other process parameters, these are considered within the purview of one of ordinary skill in the art and would depend upon the type of material being laminated.” (Sharinn Ex. 23, Office Action mailed 9/8/97, see OCS_C_045587-92).</p> <p>“said second pressure is at least approximately 25% greater than said first pressure” – “P.V.C. Press.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, see diagram).</p>
<p>8. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said core is heated in step (c)(i) to a temperature in the range of 275.degree. F. to 400.degree. F. and said first period of time is at least five (5) minutes.</p>	<p>1991 Oakwood Instruction Manual</p> <p><u>Cumulative</u> ‘533 patent</p>	<p>Examiner indicated “As to the dependent claims regarding the various sequential pressures and other process parameters, these are considered within the purview of one of ordinary skill in the art and would depend upon the type of material being laminated.” (Sharinn Ex. 23, Office Action mailed 9/8/97, see OCS_C_045587-92).</p> <p>“temperature in the range of 275.degree. F. to 400.degree. F.” – unpatentable modification of prior art temperatures (“LAMINATING TEMPERATURE 90 – 200 DEGREES C” (Sharinn Ex. 12, OIM at 6, ¶ 3.3B)).</p> <p><u>Cumulative</u> “the application of heat ... at 265° platen temperature” (Sharinn Ex. 15, ‘533 patent, col. 4, line 33).</p>

	1987 Oakwood Sales Brochure	“said first period of time is at least five (5) minutes” – “P.V.C. Temp.” curve of the “Typical Lamination Cycles” diagram and horizontal axis of diagram indicating time in minutes (“Mins”) (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).
<i>11. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said step (d) is carried out utilizing a coating technique selected from the group consisting of silk screen printing, offset printing, letterpress printing, screen printing, roller coating, spray printing, and litho-printing.</i>	<p>1991 Oakwood Instruction Manual</p> <p><u>Cumulative</u> ‘533 patent</p>	<p>Examiner indicated “As to the dependent claims regarding the various sequential pressures and other process parameters, these are considered within the purview of one of ordinary skill in the art and would depend upon the type of material being laminated.” (Sharinn Ex. 23, Office Action mailed 9/8/97, <u>see</u> OCS_C_045587-92).</p> <p>“coating technique selected from the group consisting of ...” – “Combine some of these components with customized printed core and overlay materials ...” (Sharinn Ex. 12, OIM at 1, ¶ 1).</p> <p><u>Cumulative</u> “The backside of the substrate ... also has printed information thereon formed by a conventional offset lithography process, for example.” (Sharinn Ex. 15, ‘533 patent, col. 3, lines 60-63).</p>
<i>13. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said at least one electronic element is a micro-chip and an associated wire antenna.</i>	<p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> JP ‘214</p>	<p>“micro-chip and an associated wire antenna” – Sharinn Ex. 10, OS6B at 4, <u>see</u> text under heading “Machine Reading Applications”.</p> <p><u>Cumulative</u> Sharinn Ex. 6 and Ex. 24, JP ‘214, reference numerals 11 and 12, Figs. 1-3.</p>

	<u>Cumulative</u> '201 patent	<u>Cumulative</u> Sharinn Ex. 13, '201 patent, reference numerals 201 and 202, Figs. 2A-2F.
<i>14. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said at least one electronic element is a micro-chip and an associated circuit board antenna.</i>	1987 Oakwood Series 6 Brochure	"micro-chip and an associated circuit board antenna" – Sharinn Ex. 10, OS6B at 4, <u>see</u> text under heading "Machine Reading Applications".
	<u>Cumulative</u> JP '214	<u>Cumulative</u> Sharinn Ex. 6 and Ex. 24, JP '214, reference numerals 11 and 12, Figs. 1-3.
	<u>Cumulative</u> '201 patent	<u>Cumulative</u> Sharinn Ex. 13, '201 patent, reference numerals 201 and 202, Figs. 2A-2F.
<i>15. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said at least one electronic element is a read/write integrated chip and an associated antenna.</i>	1987 Oakwood Series 6 Brochure	"read/write integrated chip and an associated antenna" – Sharinn Ex. 10, OS6B at 4, <u>see</u> text under heading "Machine Reading Applications".
	<u>Cumulative</u> JP '214	<u>Cumulative</u> Sharinn Ex. 6 and Ex. 24, JP '214, reference numerals 11 and 12, Figs. 1-3.
	<u>Cumulative</u> '201 patent	<u>Cumulative</u> Sharinn Ex. 13, '201 patent, reference numerals 201 and 202, Figs. 2A-2F and col. 1, lines 50-51 ("Smart Cards are used with a reader/writer that includes an interface ('external interface') that is used to transmit information to or from the Smart Card.").
<i>16. A hot lamination process for the manufacture of plastic cards, said process comprising the steps of:</i>	1987 Oakwood Sales Brochure	"A hot lamination process for the manufacture of plastic cards" – "Oakwood has developed a unique lamination

		<p>cycle for the highest quality bank and credit card manufacturing producing a well laminated structure The temperature of all platens is controlled individually to provide uniform heating throughout the press.” (Sharinn Ex. 11, OSB at 6).</p> <p><u>Cumulative</u> JP ‘214</p> <p><u>Cumulative</u> “Japanese Patent ‘214 taught a process for forming a smart card which included the steps of laminating with heat and pressure an assembly which included an IC chip 11 and a thin coil 12 (an antenna).” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS C 045446-58).</p>
<i>(a) providing first and second plastic core sheets;</i>	<p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> JP ‘214</p>	<p>“first and second plastic core sheets” - second opaque plastic layer and substrate beneath inductive codings (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).</p> <p><u>Cumulative</u> “The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS C 045446-58).</p>
<i>(b) positioning at least one electronic element in the absence of a non-electronic carrier directly between said first and second plastic core sheets to form a layered core;</i>	<p>1987 Oakwood Series 6 Brochure</p> <p>1987 Oakwood Series 6 Brochure</p>	<p>“positioning ...” – inductive coils are illustrated as being positioned between second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).</p> <p>“electronic element” – inductive codings or microchip (Sharinn Ex. 10, OS6B at 4, <u>see</u></p>

	1987 Oakwood Series 6 Brochure	illustration and text under heading “Machine Reading Applications”).
	1987 Oakwood Series 6 Brochure	“in the absence of a non-electronic carrier” – inductive codings are illustrated with no protection (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“directly” – inductive coils are in immediate physical contact with second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“layered core” – second opaque plastic layer, inductive codings and substrate form the “core” (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	<u>Cumulative</u> JP ‘214	<u>Cumulative</u> “The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14.” (Sharinn Ex. 6 Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).
<i>(c) positioning said core in a laminator apparatus, and subjecting said core to a heat and pressure cycle, said heat and pressure cycle comprising the steps of:</i>	1987 Oakwood Series 6 Brochure	“positioning said core in a laminator apparatus” – second opaque plastic layer, inductive codings and substrate can be positioned in the Series 6 laminator: “Many of the more sophisticated cards are made possible due only to the flexibility of the heat and pressure system which is a major feature of the Series 6 Laminators.” (Sharinn Ex. 10, OS6B at 3, 4 <u>see</u> illustration).
	1987 Oakwood Series	“heat and pressure cycle” –

	6 Brochure	“heat and pressure are applied” to second opaque plastic layer, inductive codings and substrate (Sharinn Ex. 10, OS6B at 3).
	<u>Cumulative</u> JP ‘214	<u>Cumulative</u> “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, see OCS C 045446-58).
<i>(i) heating said core in said laminator, in the presence of a minimal first ram pressure, to a temperature which causes controlled flow of said plastic which makes up said first and second plastic core sheets;</i>	1987 Oakwood Sales Brochure	“heating said core” – “P.V.C. Temp.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).
	1987 Oakwood Sales Brochure	“minimal first ram pressure” – Sharinn Ex. 11, OSB at 6, <u>see</u> initial “P.V.C. Press.” ramp up in illustration.
	<u>Cumulative</u> 1991 Oakwood Instruction Manual	<u>Cumulative</u> Sharinn Ex. 12, OIM at 6 (“Low pressure is applied to the material during the heating stage to achieve lamination.”).
	1991 Oakwood Instruction Manual	“controlled flow of said plastic” – “Actual lamination will take place when the material has reached a molten stage at very low pressures.” (Sharinn Ex. 12, OIM at 6).
	<u>Cumulative</u> JP ‘214	<u>Cumulative</u> “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214;

		Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C 045446-58).
<i>(ii) applying a second pressure uniformly across said core for encapsulating said at least one electronic element within said controlled flow plastic;</i>	1987 Oakwood Sales Brochure	“applying a second pressure” – “P.V.C. Press.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).
	1987 Oakwood Sales Brochure	“uniformly across said core” – “Precise, uniform pressure distribution over the whole platan eliminating pressure losses at the edges and corners.” (Sharinn Ex. 11, OSB at 1).
	1987 Oakwood Series 6 Brochure	“encapsulating said at least one electronic element” - during lamination inductive codings are enclosed by second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	<u>Cumulative</u> JP ‘214	<u>Cumulative</u> “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C 045446-58).
<i>(iii) subsequently cooling said core in conjunction with the concurrent application of a third pressure uniformly across said core, said core including and upper and lower surfaces;</i>	1987 Oakwood Sales Brochure	“cooling . . . in conjunction with the concurrent application of a third pressure” – “P.V.C. Temp.” and “P.V.C. Press.” curves of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).
	1987 Oakwood Sales	“uniformly across said core” –

	Brochure	“Precise, uniform pressure distribution over the whole platen eliminating pressure losses at the edges and corners.” (Sharinn Ex. 11, OSB at 1).
<i>(d) printing on at least one of said upper and lower surfaces of said core such that a layer of ink is applied to at least a portion of said at least one upper and lower surface of said core.</i>	1991 Oakwood Instruction Manual <u>Cumulative</u> ‘533 patent	“printing on at least one of said upper and lower surfaces of said core” – “Combine some of these components with customized printed core and overlay materials ...” (Sharinn Ex. 12, OIM at 1 ¶ 1). <u>Cumulative</u> “The backside of the substrate ... also has printed information thereon formed by a conventional offset lithography process, for example.” (Sharinn Ex. 15, ‘533 patent, col. 3, lines 60-63).
<i>17. The method as recited in claim 16 wherein said first and second core layers are devoid of any appreciable cutouts.</i>	1987 Oakwood Series 6 Brochure <u>Cumulative</u> JP ‘214	“first and second core layers are devoid of any appreciable cutouts” – second opaque plastic layer and substrate beneath the inductive codings (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration). <u>Cumulative</u> Plastic films 14 are devoid of any appreciable cutouts. (Sharinn Ex. 6 and Ex. 24, JP ‘214, Figs. 1-4).

Invalidity Claim Chart
in Support of
Oberthur's Summary Judgment Motion for Invalidity

U.S. Pat. No. 6,036,099

Reference Key:

- 1987 Oakwood Series 6 Brochure (“OS6B”)
- 1987 Oakwood Sales Brochure (“OSB”)
- 1991 Oakwood Series 6 Instruction Manual (“OIM”)
- Japanese Patent Application Publication H6-176214 (“JP ‘214”)
- Templeton, Jr. et al., U.S. Patent No. 5,519,201 (“ ‘201 patent”)
- Lyszczarz, U.S. Patent No. 4,897,533 (“ ‘533 patent”)
- Haghiri – Tehrani et al., U.S. Patent No. 4,450,024 (“ ‘024 patent”)
- Hida et al., U.S. Pat. No. 4,841,134 (“ ‘134 patent”)
- Mundigl et al., U.S. Pat. No. 5,809,633 (“ ‘633 patent”)

<u>Claims</u>	<u>Prior Art</u>	<u>Application of Prior Art</u>
	(prior art relied on by the Examiner is highlighted in yellow) (prior art providing duplicative teachings is labeled “cumulative”)	(prior art relied on by the Examiner is highlighted in yellow) (prior art providing duplicative teachings is labeled “cumulative”)

1. A process for incorporating at least one electronic element in the manufacture of a plastic card, comprising the steps of:	‘024 patent	“electronic element” – IC module 5 (Sharinn Ex. 14, ‘024 patent, col. 3, lines 10-11, Fig. 1; <u>see also</u> col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, <u>see</u> OCS_C_045670-45680).
	1987 Oakwood Series 6 Brochure	“electronic element” – inductive codings or microchip (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration and text under heading “Machine Reading Applications”).
	<u>Cumulative</u>	<u>Cumulative</u>

	JP '214	<p>“Japanese Patent ‘214 taught a process for forming a smart card which included the steps of laminating with heat and pressure an assembly which included an IC chip 11 and a thin coil 12 (an antenna).” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS C 045446-58).</p>
(a) providing first and second plastic core sheets;	<p>‘024 patent</p> <p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> JP ‘214</p>	<p>“first and second plastic core sheets” – cover films 12, 13 (Sharinn Ex. 14, ‘024 patent, col. 3, lines 50-53; <u>see also</u> col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, <u>see</u> OCS C 045670-45680).</p> <p>“first and second plastic core sheets” - second opaque plastic layer and substrate beneath inductive codings (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).</p> <p><u>Cumulative</u> “The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS C 045446-58).</p>
(b) positioning said at least one electronic element in the absence of a non-electronic carrier directly between said first and second plastic core sheets to form a core, said plastic core sheets defining a pair of inner and outer surfaces of said core;	<p>‘024 patent</p> <p>1987 Oakwood Series 6 Brochure</p>	<p>“positioning ...” – IC module 5 (placed in carrier element 6) is illustrated as being positioned between cover films 12, 13 (Sharinn Ex. 14, ‘024 patent, Fig. 2a; <u>see also</u> col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, <u>see</u> OCS C 045670-45680).</p> <p>“positioning ...” – inductive codings are illustrated as being positioned between second</p>

		opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“in the absence of a non-electronic carrier” – inductive codings are illustrated with no protection (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“directly” – inductive codings are in immediate physical contact with second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	<u>‘024 patent</u>	“core” – cover films 12, 13 and IC module 5 form the “core” (Sharinn Ex. 14, ‘024 patent, Fig. 2a; <u>see also</u> col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, <u>see</u> OCS_C_045670-45680).
	1987 Oakwood Series 6 Brochure	“core” – second opaque plastic layer, inductive codings and substrate form the “core” (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“a pair of inner and outer surfaces of said core” – outside surface of second opaque plastic layer and outside surface of substrate are illustrated (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	<u>Cumulative</u> JP ‘214	<u>Cumulative</u> “The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u>

		OCS_C_045446-58).
<i>(c) positioning said core in a laminator apparatus, and subjecting said core to a heat and pressure cycle; said heat and pressure cycle comprising the steps of:</i>	<p>'024 patent</p> <p>1987 Oakwood Series 6 Brochure</p> <p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> JP '214</p>	<p>"positioning said core in a laminator apparatus" – "FIGS. 2a and 2b show the first embodiment of the invention before and after the laminating process (Sharinn Ex. 14, '024 patent, col. 3, lines 45-49; <u>see also</u> col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, <u>see</u> OCS_C_045670-45680).</p> <p>"positioning said core in a laminator apparatus" – second opaque plastic layer, inductive codings and substrate can be positioned in the Series 6 laminator: "Many of the more sophisticated cards are made possible due only to the flexibility of the heat and pressure system which is a major feature of the Series 6 Laminators." (Sharinn Ex. 10, OS6B at 3, 4 <u>see</u> illustration).</p> <p>"heat and pressure cycle" – "[h]eat and pressure are applied" to second opaque plastic layer, inductive codings and substrate (Sharinn Ex. 10, OS6B at 3).</p> <p><u>Cumulative</u> "The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card." (Sharinn Ex. 6 and Ex. 24, JP '214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p>
<i>(i) heating said core for a first period of time;</i>	'024 patent	"heating said core for a first period of time" – "In the

	<p>1987 Oakwood Sales Brochure</p> <p><u>Cumulative</u> JP '214</p>	<p>further course of the laminating process the card composite is gradually heated up so that the PVC-layers soften.” (Sharinn Ex. 14, ‘024 patent, col. 3, lines 63-65; <u>see also</u> col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, <u>see</u> OCS_C_045670-45680).</p> <p>“heating said core for a first period of time” – “P.V.C. Temp.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).</p> <p><u>Cumulative</u> “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p>
<p><i>(ii) applying a first pressure to said core for a second period of time such that said at least one electronic element is encapsulated by said core;</i></p>	<p><u>‘024 patent</u></p>	<p>“applying a first pressure ... for a second period of time” – “The laminating pressure will thus be increased as a function of the temperature ..., but on the other hand the carrier element is subjected to the full laminating pressure in the final phase of the laminating process, after the card layers have softened. By use of the method of controlling the laminating pressure as a function of the temperature, integrated circuits can be embedded in identification cards undangerously, without any need of additional measures.” (Sharinn Ex. 14,</p>

	<p>1987 Oakwood Sales Brochure</p> <p><u>Cumulative</u> JP ‘214</p>	<p>‘024 patent, col. 6, lines 37-46; see also col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, see OCS_C_045670-45680).</p> <p>“applying a first pressure ... for a second period of time” – “P.V.C. Press.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, see diagram).</p> <p><u>Cumulative</u> “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, see OCS_C_045446-58).</p>
<p>(iii) cooling said core while applying a second pressure to said core;</p>	<p>‘024 patent</p>	<p>“cooling ... while applying a second pressure” – “In the cold state the carrier element 27 is hardly affected by the pressure of the laminating plate” (Sharinn Ex. 14, ‘024 patent, col. 5, lines 33-35); “The laminating pressure will thus be increased as a function of the temperature ..., but on the other hand the carrier element is subjected to the full laminating pressure in the final phase of the laminating process, after the card layers have softened. By use of the method of controlling the laminating pressure as a function of the temperature, integrated circuits can be embedded in identification cards undangerously, without any need of additional</p>

	1987 Oakwood Sales Brochure	measures.” (Sharinn Ex. 14, ‘024 patent, col. 6, lines 37-46; see also col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, see OCS_C_045670-45680). “cooling ... while applying a second pressure” – “P.V.C. Temp.” and “P.V.C. Press.” curves of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, see diagram).
<i>(d) coating at least one of said outer surfaces of said core with a layer of ink;</i>	‘024 patent 1991 Oakwood Instruction Manual <u>Cumulative</u> ‘533 patent	“coating ... with a layer of ink” – (Sharinn Ex. 14, ‘024 patent, col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, see OCS_C_045670-45680). “coating ... with a layer of ink” – “Combine some of these components with customized printed core and overlay materials ...” (Sharinn Ex. 12, OIM at 1 ¶ 1). <u>Cumulative</u> “The backside of the substrate ... also has printed information thereon formed by a conventional offset lithography process, for example.” (Sharinn Ex. 15, ‘533 patent, col. 3, lines 60-63).
<i>(e) milling a region of said core to a controlled depth so as to form a cavity which exposes at least one contact pad of said electronic element.</i>	‘024 patent	“milling a region of said core to a controlled depth ... to form a cavity which exposes ... one contact pad of ... one electronic device” – (Sharinn Ex. 14, ‘024 patent, col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, see OCS_C_045670-45680).

	'201 patent	<p>“milling a region of said core to a controlled depth . . . to form a cavity which exposes . . . one contact pad of . . . one electronic device” – “electrical interconnection has been made by forming holes through the main body of the card, the holes extending between the respective electrical contacts of the devices.” (Sharinn Ex. 13, '201 patent, col. 2, lines 27-30); “The contact holes 203b and cavity hole 203a can be formed . . . by, for instance, . . . milling.” (Sharinn Ex. 13, '201 patent, col. 7, lines 10-16).</p>
<p>2. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said laminator apparatus has first and second laminating plates, at least one of said first and second laminating plates having a matte finish for creating a textured surface on at least one of said outer surfaces of said core.</p>	<p>'134 patent</p> <p>'134 patent</p>	<p>“at least one of said first and second laminating plates having a matte finish” – (Sharinn Ex. 16, '134 patent, col. 5, lines 6-13; Sharinn Ex. 22, Office Action mailed 11/18/98, <u>see OCS_C_045670-45680</u>).</p> <p>“at least one of said first and second laminating plates having a matte finish” – “[S]tainless steel plates 63a subjected to matte working by a sand matte were superposed thereon to carry out hot pressing As a result, a sheet for reinforcement 51 applied with matte working on both surfaces of the substrate 61 ... was obtained. Matte working can be applied on any desired surface by replacing the above stainless steel plates 63a with the desired plate.” (Sharinn Ex. 16, '134 patent, col. 12, lines 19-27).</p>
3. The process for	'134 patent	“each of said first and second

<p><i>incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 2, wherein each of said first and second laminating plates has a matte finish for creating said textured surface on both of said outer surfaces of said core.</i></p>	<p>‘134 patent</p>	<p>laminating plates has a matte finish” – (Sharinn Ex. 16, ‘134 patent, col. 5, lines 6-13; Sharinn Ex. 22, Office Action mailed 11/18/98, <u>see</u> OCS_C_045670-45680).</p> <p>“each of said first and second laminating plates has a matte finish” – “[S]tainless steel plates 63a subjected to matte working by a sand matte were superposed thereon to carry out hot pressing As a result, a sheet for reinforcement 51 applied with matte working on both surfaces of the substrate 61 ... was obtained. Matte working can be applied on any desired surface by replacing the above stainless steel plates 63a with the desired plate.” (Sharinn Ex. 16, ‘134 patent, col. 12, lines 19-27).</p>
<p>4. <i>The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said first and second plastic core sheets are made from a material selected from the group consisting of polyvinyl chloride, polyester, and acrylonitrile-butadiene-styrene, each of said sheets having a thickness in the range of 0.007 to 0.024 inch.</i></p>	<p>‘024 patent</p> <p>1987 Oakwood Series 6 Brochure</p> <p>‘533 patent</p>	<p>“polyvinyl chloride” – (‘024 patent, col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, <u>see</u> OCS_C_045670-45680).</p> <p>“polyvinyl chloride” – second opaque plastic layer and substrate beneath inductive codings are made of plastic (P.V.C.) (Sharinn Ex. 10, OS6B at 3, 4, <u>see</u> illustration”).</p> <p>“thickness in the range of 0.007 to 0.024 inch” – unpatentable modification of prior art dimensions (“The plastic substrate 2 of the card is ... preferably PVC, with a thickness of 0.0265 inch.” (Sharinn Ex. 15, ‘533 patent, col.4, lines 12-21)).</p>

	<p>Instruction Manual</p> <p><u>Cumulative</u> JP ‘214</p>	<p>(“Combine some of these components with customized printed core and overlay materials”).</p> <p><u>Cumulative</u> “[T]he references as set forth above suggested the use of multiple films over the chip, for example Japanese Patent ‘214 suggested the use of multiple films 14 and 15 over the assembly.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p>
<p>9. <i>The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said core is heated in step (c)(i) to a temperature in the range of 275.degree. F. to 400.degree. F. and said first period of time is at least five (5) minutes.</i></p>	<p>‘024 patent</p> <p>1991 Oakwood Instruction Manual</p> <p><u>Cumulative</u> ‘533 patent</p> <p>1987 Oakwood Sales Brochure</p>	<p>“temperature in the range of 275.degree. F. to 400.degree. F.” – (Sharinn Ex. 14, ‘024 patent, col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, <u>see</u> OCS_C_045670-45680).</p> <p>“temperature in the range of 275.degree. F. to 400.degree. F.” – unpatentable modification of prior art temperatures (“LAMINATING TEMPERATURE 90 – 200 DEGREES C” (Sharinn Ex. 12, OIM at 6, ¶ 3.3B).</p> <p><u>Cumulative</u> “the application of heat ... at 265° platen temperature” (Sharinn Ex. 15, ‘533 patent, col. 4, line 33).</p> <p>“said first period of time is at least five (5) minutes” - “P.V.C. Temp.” curve of the “Typical Lamination Cycles” diagram and horizontal axis of diagram indicating time in</p>

		minutes (“Mins”) (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).
<i>12. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said step (d) is carried out utilizing a coating technique selected from the group consisting of silk screen printing, offset printing, letterpress printing, screen printing, roller coating, spray printing and litho-printing.</i>	<p><u>‘024 patent</u></p> <p>1991 Oakwood Instruction Manual</p> <p><u>Cumulative</u> <u>‘533 patent</u></p>	<p>“coating technique selected from the group consisting of ...” – (Sharinn Ex. 14, ‘024 patent, col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, <u>see</u> OCS_C_045670-45680).</p> <p>“coating technique selected from the group consisting of ...” – “Combine some of these components with customized printed core and overlay materials” (Sharinn Ex. 12, OIM at 1, ¶ 1).</p> <p><u>Cumulative</u> “The backside of the substrate ... also has printed information thereon formed by a conventional offset lithography process, for example.” (Sharinn Ex. 15, ‘533 patent, col. 3, lines 60-63).</p>
<i>14. A hot lamination process is recited in claim 1 comprising the further step of inserting an electronic contact element into said cavity.</i>	<p><u>‘024 patent</u></p> <p><u>‘201 patent</u></p>	<p>“inserting an electronic contact element into said cavity” – (Sharinn Ex. 14, ‘024 patent, col. 5, lines 7-47; Sharinn Ex. 22, Office Action mailed 11/18/98, <u>see</u> OCS_C_045670-45680).</p> <p>“inserting an electronic contact element into said cavity” – “electrically conductive plugs 205 inserted into contact holes 203b ...” (Sharinn Ex. 13, ‘201 patent, col. 7, lines 45-59, and Figs. 2J, 2K and 2L, items 203b and 205).</p>

		reference numerals 201 and 202, Figs. 2A-2F and col. 1, lines 50-51 (“Smart Cards are used with a reader/writer that includes an interface (‘external interface’) that is used to transmit information to or from the Smart Card.”).
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Invalidity Claim Chart
in Support of
Oberthur's Summary Judgment Motion for Invalidity

U.S. Pat. No. 6,214,155

Reference Key:

- 1987 Oakwood Series 6 Brochure (“OS6B”)
- 1987 Oakwood Sales Brochure (“OSB”)
- 1991 Oakwood Series 6 Instruction Manual (“OIM”)
- Japanese Patent Application Publication H6-176214 (“JP ‘214”)
- Templeton, Jr. et al., U.S. Patent No. 5,519,201 (“ ‘201 patent”)
- Lyszczarz, U.S. Patent No. 4,897,533 (“ ‘533 patent”)
- Hida et al., U.S. Patent No. 4,841,134 (“ ‘134 patent”)

<u>Claims</u>	<u>Prior Art</u>	<u>Application of Prior Art</u>
<i>1. A process for incorporating at least one electronic element in the manufacture of a plastic card, comprising the steps of:</i>	1987 Oakwood Series 6 Brochure <u>Cumulative</u> JP ‘214	“electronic element” – inductive codings or microchip (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration and text under heading “Machine Reading Applications”). <u>Cumulative</u> “Japanese Patent ‘214 taught a process for forming a smart card which included the steps of laminating with heat and pressure an assembly which included an IC chip 11 and a thin coil 12 (an antenna).” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).
<i>(a) providing first and second plastic core sheets;</i>	1987 Oakwood Series 6 Brochure <u>Cumulative</u>	“first and second plastic core sheets” - second opaque plastic layer and substrate beneath inductive codings (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration). <u>Cumulative</u>

	JP '214	"The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14." (Sharinn Ex. 6 and Ex. 24, JP '214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS C 045446-58).
<i>(b) positioning said at least one electronic element in the absence of a non-electronic carrier directly between said first and second plastic core sheets to form a core, said plastic core sheets defining a pair of inner and outer surfaces of said core;</i>	1987 Oakwood Series 6 Brochure	"positioning ..." – inductive codings are illustrated as being positioned between second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	"in the absence of a non-electronic carrier" – inductive codings are illustrated with no protection (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	"directly" – inductive codings are in immediate physical contact with second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	"core" – second opaque plastic layer, inductive codings and substrate form the "core" (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	"a pair of inner and outer surfaces of said core" – outside surface of second opaque plastic layer and outside surface of substrate are illustrated (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	<u>Cumulative</u> JP '214	<u>Cumulative</u> "The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14." (Sharinn Ex. 6 Ex. 24, JP '214;

		Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C 045446-58).
<i>(c) positioning said core in a laminator apparatus, and subjecting said core to a heat and pressure cycle, said heat and pressure cycle comprising the steps of:</i>	1987 Oakwood Series 6 Brochure	“positioning said core in a laminator apparatus” – second opaque plastic layer, inductive codings and substrate can be positioned in the Series 6 laminator: “Many of the more sophisticated cards are made possible due only to the flexibility of the heat and pressure system which is a major feature of the Series 6 Laminators.” (Sharinn Ex. 10, OS6B at 3, 4 <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“heat and pressure cycle” – “[h]eat and pressure are applied” to second opaque plastic layer, inductive codings and substrate (Sharinn Ex. 10, OS6B at 3).
	<u>Cumulative</u> JP ‘214	<u>Cumulative</u> “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C 045446-58).
<i>(i) heating said core for a first period of time;</i>	1987 Oakwood Sales Brochure	“heating said core for a first period of time” – “P.V.C. Temp.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).
	<u>Cumulative</u> JP ‘214	<u>Cumulative</u> “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to

		form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS C 045446-58).
<i>(ii) applying a first pressure to said core for a second period of time such that said at least one electronic element is encapsulated by said core;</i>	<p>1987 Oakwood Sales Brochure</p> <p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> JP ‘214</p>	<p>“applying a first pressure ... for a second period of time” – “P.V.C. Press.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).</p> <p>“electronic element is encapsulated by said core” – during lamination inductive codings are enclosed by second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).</p> <p><u>Cumulative</u> “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS C 045446-58).</p>
<i>(iii) cooling said core while applying a second pressure to said core,</i>	1987 Oakwood Sales Brochure	“cooling ... while applying a second pressure” – “P.V.C. Temp.” and “P.V.C. Press.” curves of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).
<i>(d) applying a layer of overlamine film to at least one of said outer surfaces of said core.</i>	<p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> 1991 Oakwood Instruction Manual</p>	<p>“overlamine film” – bottom plastic opaque layer (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).</p> <p><u>Cumulative</u> Sharinn Ex. 12, OIM at 1 ¶ 1 (“Combine some of these components with customized</p>

	<p><u>Cumulative</u> JP ‘214</p>	<p>printed core and overlay materials”).</p> <p><u>Cumulative</u> “[T]he references as set forth above suggested the use of multiple films over the chip, for example Japanese Patent ‘214 suggested the use of multiple films 14 and 15 over the assembly.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p>
<p>2. <i>The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said laminator apparatus has first and second laminating plates, at least one of said first and second laminating plates having a matte finish for creating a textured surface on at least one of said outer surfaces of said core.</i></p>	<p>1987 Oakwood Series 6 Brochure</p> <p>‘134 patent</p>	<p>“first and second laminating plates” – “The card sets to be laminated are inserted between stainless steel laminating plates and inserted into the machine on the laminating tray.” (Sharinn Ex. 12, OS6B at 3).</p> <p>“at least one of said first and second laminating plates having a matte finish” – “[S]tainless steel plates 63a subjected to matte working by a sand matte were superposed thereon to carry out hot pressing As a result, a sheet for reinforcement 51 applied with matte working on both surfaces of the substrate 61 ... was obtained. Matte working can be applied on any desired surface by replacing the above stainless steel plates 63a with the desired plate.” (Sharinn Ex. 16, ‘134 patent, col. 12, lines 19-27).</p>
<p>3. <i>The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 2, wherein</i></p>	<p>‘134 patent</p>	<p>“each of said first and second laminating plates has a matte finish” – “[S]tainless steel plates 63a subjected to matte working by a sand matte were</p>

7. <i>The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 6, wherein said second pressure is at least approximately 25% greater than said first pressure.</i>	1987 Oakwood Sales Brochure	“said second pressure is at least approximately 25% greater than said first pressure” – “P.V.C. Press.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).
8. <i>The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said core is heated in step (c)(i) to a temperature in the range of 275.degree. F. to 400.degree. F. and said first period of time is at least five (5) minutes.</i>	1991 Oakwood Instruction Manual	“temperature in the range of 275.degree. F. to 400.degree. F.” – unpatentable modification of prior art temperatures (“LAMINATING TEMPERATURE 90 – 200 DEGREES C” (Sharinn Ex. 12, OIM at 6, ¶ 3.3B)).
	<u>Cumulative</u> ‘533 patent 1987 Oakwood Sales Brochure	<u>Cumulative</u> “the application of heat ... at 265° platen temperature” (Sharinn Ex. 15, ‘533 patent, col. 4, line 33). “P.V.C. Temp.” curve of the “Typical Lamination Cycles” diagram and horizontal axis of diagram indicating time in minutes (“Mins”) (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).
11. <i>The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said at least one electronic element is a micro-chip and an associated wire antenna.</i>	1987 Oakwood Series 6 Brochure <u>Cumulative</u> JP ‘214 <u>Cumulative</u> ‘201 patent	“micro-chip and an associated wire antenna” – Sharinn Ex. 10, OS6B at 4, <u>see</u> text under heading “Machine Reading Applications”. <u>Cumulative</u> Sharinn Ex. 6 and Ex. 24, JP ‘214, reference numerals 11 and 12, Figs. 1-3. <u>Cumulative</u> Sharinn Ex. 13, ‘201 patent, reference numerals 201 and 202, Figs. 2A-2F.
12. <i>The process for</i>	1987 Oakwood Series	“micro-chip and an associated

<p><i>incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said at least one electronic element is a micro-chip and an associated circuit board antenna.</i></p>	<p>6 Brochure</p> <p><u>Cumulative</u> JP '214</p> <p><u>Cumulative</u> '201 patent</p>	<p>circuit board antenna” – Sharinn Ex. 10, OS6B at 4, <u>see</u> text under heading “Machine Reading Applications”.</p> <p><u>Cumulative</u> Sharinn Ex. 6 and Ex. 24, JP '214, reference numerals 11 and 12, Figs. 1-3.</p> <p><u>Cumulative</u> Sharinn Ex. 13, '201 patent, reference numerals 201 and 202, Figs. 2A-2F.</p>
<p><i>13. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said at least one electronic element is a read/write integrated chip and an associated antenna.</i></p>	<p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> JP '214</p> <p><u>Cumulative</u> '201 patent</p>	<p>“read/write integrated chip and an associated antenna” – Sharinn Ex. 10, OS6B at 4, <u>see</u> text under heading “Machine Reading Applications”.</p> <p><u>Cumulative</u> Sharinn Ex. 6 and Ex. 24, JP '214, reference numerals 11 and 12, Figs. 1-3.</p> <p><u>Cumulative</u> Sharinn Ex. 13, '201 patent, reference numerals 201 and 202, Figs. 2A-2F and col. 1, lines 50-51 (“Smart Cards are used with a reader/writer that includes an interface (‘external interface’) that is used to transmit information to or from the Smart Card.”).</p>
<p><i>14. A plastic card constructed in accordance with claim 1.</i></p>	<p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> JP '214</p>	<p>“plastic card” – card set illustrated in OS6B on p. 4. (Sharinn Ex. 10).</p> <p><u>Cumulative</u> Card illustrated in figures of JP '214 (Sharinn Ex. 6 and Ex. 24, JP '214, reference numerals 11 and 12, Figs. 1-4).</p>
<p><i>15. A hot lamination process for the manufacture of plastic</i></p>	<p>1987 Oakwood Sales Brochure</p>	<p>“A hot lamination process for the manufacture of plastic</p>

<p><i>cards, said process comprising the steps of:</i></p>	<p><u>Cumulative</u> JP '214</p>	<p>cards” – “Oakwood has developed a unique lamination cycle for the highest quality bank and credit card manufacturing producing a well laminated structure The temperature of all platens is controlled individually to provide uniform heating throughout the press.” (Sharinn Ex. 11, OSB at 6).</p> <p><u>Cumulative</u> “Japanese Patent ‘214 taught a process for forming a smart card which included the steps of laminating with heat and pressure an assembly which included an IC chip 11 and a thin coil 12 (an antenna).” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS C 045446-58).</p>
<p><i>(a) providing first and second plastic core sheets;</i></p>	<p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> JP ‘214</p>	<p>“first and second plastic core sheets” - second opaque plastic layer and substrate beneath inductive codings (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).</p> <p><u>Cumulative</u> “The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS C 045446-58).</p>
<p><i>(b) positioning at least one electronic element in the absence of a non-electronic carrier directly between said first and second plastic core sheets to form a layered core;</i></p>	<p>1987 Oakwood Series 6 Brochure</p> <p>1987 Oakwood Series</p>	<p>“positioning ...” – inductive coils are illustrated as being positioned between second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).</p> <p>“electronic element” –</p>

	6 Brochure	inductive codings or microchip (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration and text under heading “Machine Reading Applications”).
	1987 Oakwood Series 6 Brochure	“in the absence of a non-electronic carrier” – inductive codings are illustrated with no protection (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“directly” – inductive coils are in immediate physical contact with second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“layered core” – second opaque plastic layer, inductive codings and substrate form the “core” (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	<u>Cumulative</u> JP ‘214	<u>Cumulative</u> “The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14.” (Sharinn Ex. 6 Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C 045446-58).
<i>(c) positioning said core in a laminator apparatus, and subjecting said core to a heat and pressure cycle, said heat and pressure cycle comprising the steps of:</i>	1987 Oakwood Series 6 Brochure	“positioning said core in a laminator apparatus” – second opaque plastic layer, inductive codings and substrate can be positioned in the Series 6 laminator: “Many of the more sophisticated cards are made possible due only to the flexibility of the heat and pressure system which is a major feature of the Series 6 Laminators.” (Sharinn Ex. 10, OS6B at 3, 4 <u>see</u> illustration).

	<p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> JP '214</p>	<p>“heat and pressure cycle” – “heat and pressure are applied” to second opaque plastic layer, inductive codings and substrate (Sharinn Ex. 10, OS6B at 3).</p> <p><u>Cumulative</u> “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP '214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p>
<p><i>(i) heating said core in said laminator, in the presence of a minimal first ram pressure, to a temperature which causes controlled flow of said plastic which makes up said first and second plastic core sheets;</i></p>	<p>1987 Oakwood Sales Brochure</p> <p><u>Cumulative</u> JP '214</p> <p>1987 Oakwood Sales Brochure</p> <p><u>Cumulative</u> 1991 Oakwood Instruction Manual</p>	<p>“heating said core” – “P.V.C. Temp.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).</p> <p><u>Cumulative</u> “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP '214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p> <p>“minimal first ram pressure” – Sharinn Ex. 11, OSB at 6, <u>see</u> initial “P.V.C. Press.” ramp up in illustration.</p> <p><u>Cumulative</u> Sharinn Ex. 12, OIM at 6 (“Low pressure is applied to the material during the heating stage to achieve lamination.”).</p> <p>“controlled flow of said</p>

		plastic” – “Actual lamination will take place when the material has reached a molten stage at very low pressures.” (Sharinn Ex. 12, OIM at 6).
<i>(ii) applying a second pressure uniformly across said core for encapsulating said at least one electronic element within said controlled flow plastic;</i>	1987 Oakwood Sales Brochure	“applying a second pressure” – “P.V.C. Press.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).
	1987 Oakwood Sales Brochure	“uniformly across said core” – “Precise, uniform pressure distribution over the whole platan eliminating pressure losses at the edges and corners.” (Sharinn Ex. 11, OSB at 1).
	1987 Oakwood Series 6 Brochure	“encapsulating said at least one electronic element” - during lamination inductive codings are enclosed by second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	<u>Cumulative</u> JP ‘214	<u>Cumulative</u> “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).
<i>(iii) subsequently cooling said core in conjunction with the concurrent application of a third pressure uniformly across said core, said core including and upper and lower surfaces.</i>	1987 Oakwood Sales Brochure	“cooling . . . in conjunction with the concurrent application of a third pressure” – “P.V.C. Temp.” and “P.V.C. Press.” curves of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).

	1987 Oakwood Sales Brochure	“uniformly across said core” – “Precise, uniform pressure distribution over the whole platen eliminating pressure losses at the edges and corners.” (Sharinn Ex. 11, OSB at 1).
<i>16. The method as recited in claim 15 wherein said first and second core layers are devoid of any appreciable cutouts.</i>	1987 Oakwood Series 6 Brochure <u>Cumulative</u> JP ‘214	“first and second core layers are devoid of any appreciable cutouts” – second opaque plastic layer and substrate beneath the inductive codings (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration). <u>Cumulative</u> Plastic films 14 are devoid of any appreciable cutouts. (Sharinn Ex. 6 and Ex. 24, JP ‘214, Figs. 1-4).

Invalidity Claim Chart
in Support of
Oberthur's Summary Judgment Motion for Invalidity

U.S. Pat. No. 6,514,367

Reference Key:

- 1987 Oakwood Series 6 Brochure (“OS6B”)
- 1987 Oakwood Sales Brochure (“OSB”)
- 1991 Oakwood Series 6 Instruction Manual (“OIM”)
- Japanese Patent Application Publication H6-176214 (“JP ‘214”)
- Templeton, Jr. et al., U.S. Patent No. 5,519,201 (“‘201 patent”)
- Lyszczarz, U.S. Patent No. 4,897,533 (“‘533 patent”)
- Hida et al., U.S. Patent No. 4,841,134 (“‘134 patent”)
- UK 2,279,610 (“UK ‘610”)
- UK 2,294,899 (“UK ‘899”)
- UK 2,225,283 (“UK ‘283”)

<u>Claims</u>	<u>Prior Art</u>	<u>Application of Prior Art</u>
	(prior art relied on by the Examiner is highlighted in yellow) (prior art providing duplicative teachings is labeled “cumulative”)	(prior art relied on by the Examiner is highlighted in yellow) (prior art providing duplicative teachings is labeled “cumulative”)

<i>1. A process for incorporating at least one electronic element in the manufacture of a plastic card, comprising the steps of</i>	JP ‘214	“electronic element” – “Japanese Patent ‘214 taught a process for forming a smart card which included the steps of laminating with heat and pressure an assembly which included an IC chip 11 and a thin coil 12 (an antenna).” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).
	1987 Oakwood Series 6 Brochure	“electronic element” – inductive codings or microchip (Sharinn Ex. 10, OS6B at 4,

		see illustration and text under heading "Machine Reading Applications").
<i>(a) providing first and second plastic core sheets:</i>	JP '214 1987 Oakwood Series 6 Brochure	"first and second plastic core sheets" – "The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14." (Sharinn Ex. 6 and Ex. 24, JP '214; Sharinn Ex. 7, Office Action mailed 12/6/00, see OCS_C_045446-58). "first and second plastic core sheets" - second opaque plastic layer and substrate beneath inductive codings (Sharinn Ex. 10, OS6B at 4, see illustration).
<i>(b) positioning said at least one electronic element in the absence of a non-electronic carrier directly between said first and second plastic core sheets to form a core, said plastic core sheets defining a pair of inner and outer surfaces of said core;</i>	JP '214 1987 Oakwood Series 6 Brochure 1987 Oakwood Series 6 Brochure 1987 Oakwood Series 6 Brochure	"positioning ..." – "The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14." (Sharinn Ex. 6 Ex. 24, JP '214; Sharinn Ex. 7, Office Action mailed 12/6/00, see OCS_C_045446-58). "positioning ..." – inductive codings are illustrated as being positioned between second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, see illustration). "in the absence of a non-electronic carrier" – inductive codings are illustrated with no protection (Sharinn Ex. 10, OS6B at 4, see illustration). "directly" – inductive codings are in immediate physical contact with second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, see illustration).

	1987 Oakwood Series 6 Brochure	“core” – second opaque plastic layer, inductive codings and substrate form the “core” (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“a pair of inner and outer surfaces of said core” – outside surface of second opaque plastic layer and outside surface of substrate are illustrated (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
(c) positioning said core in a laminator apparatus, and subjecting said core to a heat and pressure cycle, said heat and pressure cycle comprising the steps of:	JP ‘214	“positioning said core in a laminator apparatus ...” – “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).
	1987 Oakwood Series 6 Brochure	“positioning said core in a laminator apparatus” – second opaque plastic layer, inductive codings and substrate can be positioned in the Series 6 laminator: “Many of the more sophisticated cards are made possible due only to the flexibility of the heat and pressure system which is a major feature of the Series 6 Laminators.” (Sharinn Ex. 10, OS6B at 3, 4 <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“heat and pressure cycle” – “[h]eat and pressure are applied” to second opaque plastic layer, inductive codings and substrate (Sharinn Ex. 10, OS6B at 3).
(i) heating said core for a first	JP ‘214	“heating said core for a first

<i>period of time;</i>	1987 Oakwood Sales Brochure	<p>period of time” – “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p> <p>“heating said core for a first period of time” – “P.V.C. Temp.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).</p>
<i>(ii) applying a first pressure to said core for a second period of time such that said at least one electronic element is encapsulated by said core;</i>	<p>JP ‘214</p> <p>1987 Oakwood Sales Brochure</p>	<p>“applying a first pressure ... for a second period of time” – “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p> <p>“applying a first pressure ... for a second period of time” – “P.V.C. Press.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).</p>
<i>(iii) cooling said core while applying a second pressure to said core, the second pressure being at least 10% greater than the first pressure; and</i>	<p>UK ‘610</p> <p>UK ‘283</p>	<p>“cooling ... while applying a second pressure” – “Subsequent to the application of this heat and pressure, the pressure was maintained while the card was allowed to cool in the press, see page 11, line 16- p. 12, line 12. The reference made clear that in order to avoid damaging the integrated circuit which was being</p>

		<p>encapsulated that one would have heated the assembly, then applied heat and pressure to the assembly in the press and then cooled the assembly while pressure was maintained. Clearly, one viewing the same would have understood the heat and pressure as well as cooling under pressure would have been performed when laminating the card with the integrated circuit therein.” (Sharinn Ex. 18, UK ‘610; Sharinn Ex. 7, Office Action mailed 5/8/02, <u>see</u> OCS_C_045482-91); “While it is believed that the reference to UK ‘610 suggested that one would have ramped up the pressure during the laminating operation, to further evidence that the highest amount of pressure would have been applied when the assembly was cooled, the reference to UK ‘283 is cited. UK ‘283 is manufacturing an integrated circuit card where the assembled layers (which included thin plastic layers which had printing on the layers as well as in integrated circuit therein) were laminated together in a press. The reference taught that the press would have been preheated, the pressure applied and then the assembly removed or the assembly would have been preheated and the pressure applied in steps with the highest pressure applied while the assembly was being cooled in the press, see page 11, lines 3-13.” (Sharrin Ex. 20, UK</p>
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	<p>1987 Oakwood Sales Brochure</p> <p>1987 Oakwood Sales Brochure</p>	<p>‘283; Sharinn Ex. 7, Office Action mailed 5/8/02, <u>see</u> OCS_C_045482-91).</p> <p>“cooling ... while applying a second pressure” – “P.V.C. Temp.” and “P.V.C. Press.” curves of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).</p> <p>“said second pressure being at least 10% greater than said first pressure” – “P.V.C. Press.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).</p>
<p><i>(d) milling a region of said core to a controlled depth so as to form a cavity which exposes at least one contact pad of said at least one electronic device.</i></p>	<p>‘201 patent</p>	<p>“milling a region of said core to a controlled depth . . . to form a cavity which exposes . . . one contact pad of . . . one electronic device” – “[A]n inductive coil 201 was formed upon a plastic substrate 202 of PVC for example. Onto the substrate 202 one laminated a second substrate 203 which covered and encapsulated the coil 201. The reference taught subsequent to the lamination operation one milled out the contact holes 203b through the substrate in locations where contact pads 201a of the inductive coil are in order to facilitate electrical contact with the inductive coil which was embedded within the plastic sheets. See column 7, lines 6-17.” (Sharinn Ex. 13, ‘201 patent; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p>

	'201 patent	<p>“milling a region of said core to a controlled depth . . . to form a cavity which exposes . . . one contact pad of . . . one electronic device” – “electrical interconnection has been made by forming holes through the main body of the card, the holes extending between the respective electrical contacts of the devices.” (Sharinn Ex. 13, '201 patent, col. 2, lines 27-30); “The contact holes 203<i>b</i> and cavity hole 203<i>a</i> can be formed . . . by, for instance, . . . milling.” (Sharinn Ex. 13, '201 patent, col. 7, lines 10-16).</p>
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<p>2. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said laminator apparatus has first and second laminating plates, at least one of said first and second laminating plates having a matte finish for creating a textured surface on at least one of said outer surfaces of said core.</p>	<p>UK '899</p> <p>'134 patent</p>	<p>“at least one of said first and second laminating plates having a matte finish” – “[I]n the art of manufacturing a smart card where an integrated circuit was disposed within the card, it was known at the time the invention was made to provide the exterior of the card with a matte finish thereon in order to reduce the spectral reflection as suggested by UK '899, see page 4, lines 4-6.” (Sharinn Ex. 19, UK '899; Sharinn Ex. 7, Office Action mailed 12/6/00, see OCS_C_045446-58).</p> <p>“at least one of said first and second laminating plates having a matte finish” – “[S]tainless steel plates 63a subjected to matte working by a sand matte were superposed thereon to carry out hot pressing As a result, a sheet for reinforcement 51 applied with matte working on both surfaces of the substrate 61 ... was obtained. Matte working can be applied on any desired surface by replacing the above stainless steel plates 63a with the desired plate.” (Sharinn Ex. 16, '134 patent, col. 12, lines 19-27).</p>
<p>3. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 2, wherein each of said first and second laminating plates has a matte finish for creating said textured surface on both of said outer surfaces of said</p>	<p>UK '899</p>	<p>“each of said first and second laminating plates has a matte finish” – “[I]n the art of manufacturing a smart card where an integrated circuit was disposed within the card, it was known at the time the invention was made to provide the exterior of the card with a matte finish thereon in order to</p>

<p><i>core.</i></p>	<p>‘134 patent</p>	<p>reduce the spectral reflection as suggested by UK ‘899, see page 4, lines 4-6.” (Sharinn Ex. 19, UK ‘899; Sharinn Ex. 7, Office Action mailed 12/6/00, see OCS_C_045446-58).</p> <p>“each of said first and second laminating plates has a matte finish” – “[S]tainless steel plates 63a subjected to matte working by a sand matte were superposed thereon to carry out hot pressing As a result, a sheet for reinforcement 51 applied with matte working on both surfaces of the substrate 61 ... was obtained. Matte working can be applied on any desired surface by replacing the above stainless steel plates 63a with the desired plate.” (Sharinn Ex. 16, ‘134 patent, col. 12, lines 19-27).</p>
<p>4. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said first and second plastic core sheets are made from a material selected from the group consisting of polyvinyl chloride, polyester, and acrylonitrile-butadiene-styrene, each of said sheets having a thickness in the range of 0.007 to 0.024 inch.</p>	<p>1987 Oakwood Series 6 Brochure</p> <p>‘533 patent</p>	<p>“polyvinyl chloride” – “[T]he references as set forth above suggested the use of PVC and/or polyester materials and one skilled in the art would have determined the suitable thickness for the material through routine experimentation.” (Sharinn Ex. 7, Office Action mailed 12/6/00, see OCS_C_045446-58).</p> <p>“polyvinyl chloride” – second opaque plastic layer and substrate beneath inductive codings are made of plastic (P.V.C.) (Sharinn Ex. 10, OS6B at 3, 4, see illustration).</p> <p>“thickness in the range of 0.007 to 0.024 inch” –</p>

		unpatentable modification of prior art dimensions (“The plastic substrate 2 of the card is ... preferably PVC, with a thickness of 0.0265 inch.” (Sharinn Ex. 15, ‘533 patent, col.4, lines 12-21)).
5. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 4, wherein said first and second plastic core sheets have a thickness of approximately 0.0125 inch.	‘533 patent	<p>“a thickness of approximately 0.0125 inch” – “[T]he references as set forth above suggested the use of PVC and/or polyester materials and one skilled in the art would have determined the suitable thickness for the material through routine experimentation.” (Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p> <p>“a thickness of approximately 0.0125 inch” – unpatentable modification of prior art dimensions (“The plastic substrate 2 of the card is ... preferably PVC, with a thickness of 0.0265 inch.” (Sharinn Ex. 15, ‘533 patent, col.4, lines 12-21)).</p>

		components with customized printed core and overlay materials ...” (Sharinn Ex. 12, OIM at 1 ¶ 1).
	<u>Cumulative</u> ‘533 patent	<u>Cumulative</u> “The backside of the substrate ... also has printed information thereon formed by a conventional offset lithography process, for example.” (Sharinn Ex. 15, ‘533 patent, col. 3, lines 60-63).
9. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said core is heated in step (c)(i) to a temperature in the range of 275.degree. F. to 400.degree. F. and said first period of time is at least five (5) minutes.	UK ‘610	“temperature in the range of 275.degree. F. to 400.degree. F.” – “UK ‘610 suggested that one skilled in the art would have increased the pressure after increasing the temperature (ramped the same up). One skilled in the art would have optimized the specific pressure used in order to achieve a good bond without disrupting the ability of the circuit to operate properly.” (Sharinn Ex. 18, UK ‘610; Sharinn Ex. 7, Office Action mailed 5/8/02, <u>see</u> OCS_C_045482-91).
	1991 Oakwood Instruction Manual	“temperature in the range of 275.degree. F. to 400.degree. F.” – unpatentable modification of prior art temperatures (“LAMINATING TEMPERATURE 90 – 200 DEGREES C” (Sharinn Ex. 12, OIM at 6, ¶ 3.3B)).
	<u>Cumulative</u> ‘533 patent	<u>Cumulative</u> “the application of heat ... at 265° platen temperature” (Sharinn Ex. 15, ‘533 patent, col. 4, line 33).
	1987 Oakwood Sales	“said first period of time is at

	Brochure	least five (5) minutes” - “P.V.C. Temp.” curve of the “Typical Lamination Cycles” diagram and horizontal axis of diagram indicating time in minutes (“Mins”) (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).
12. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein a coating step is carried out on at least one surface of said core utilizing a coating technique selected from the group consisting of silk screen printing, offset printing, letterpress printing, screen printing, roller coating, spray printing, and litho-printing.	<p>1991 Oakwood Instruction Manual</p> <p><u>Cumulative</u> ‘533 patent</p>	<p>“coating technique selected from the group consisting of ...” – “It would have been within the purview of the ordinary artisan to select suitable printing techniques from those which were readily available to the artisan and the specified printing techniques claimed are taken as conventional in the art of making smart cards.” (Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p> <p>“coating technique selected from the group consisting of ...” – “Combine some of these components with customized printed core and overlay materials” (Sharinn Ex. 12, OIM at 1, ¶ 1).</p> <p><u>Cumulative</u> “The backside of the substrate ... also has printed information thereon formed by a conventional offset lithography process, for example.” (Sharinn Ex. 15, ‘533 patent, col. 3, lines 60-63).</p>
15. A process as recited in claim 1 comprising the further step of inserting a second electronic element into said cavity, the second electronic element being in electrical communication with		<p>“inserting a second electronic element into said cavity, the second electronic element being in electrical communication with the at least one electronic element” – “Templeton taught one would</p>

<p><i>the at least one electronic element.</i></p>	<p>‘201 patent</p>	<p>have provided an electrical contact in the cavity formed by milling.” (Sharinn Ex. 13, ‘201 patent; Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p> <p>“inserting a second electronic element into said cavity, the second electronic element being in electrical communication with the at least one electronic element” – “electrically conductive plugs 205 inserted into contact holes 203b ...” (Sharinn Ex. 13, ‘201 patent, col. 7, lines 45-59, and Figs. 2J, 2K and 2L, items 203b and 205).</p>
<p><i>16. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said at least one electronic element is a micro-chip and an associated circuit board antenna or an associated wire antenna.</i></p>	<p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> JP ‘214</p> <p><u>Cumulative</u> ‘201 patent</p>	<p>“micro-chip and an associated circuit board antenna or an associated wire antenna” – “[O]ne skilled in the art would have understood what kind of chips would have been useful for the manufacture of cards.” (Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p> <p>“micro-chip and an associated circuit board antenna or an associated wire antenna” – Sharinn Ex. 10, OS6B at 4, <u>see</u> text under heading “Machine Reading Applications”.</p> <p><u>Cumulative</u> Sharinn Ex. 6 and Ex. 24, JP ‘214, reference numerals 11 and 12, Figs. 1-3.</p> <p><u>Cumulative</u> Sharinn Ex. 13, ‘201 patent, reference numerals 201 and 202, Figs. 2A-2F.</p>

<p>17. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein said at least one electronic element is a read/write integrated chip and an associated antenna.</p>	<p>1987 Oakwood Series 6 Brochure</p> <p><u>Cumulative</u> JP ‘214</p> <p><u>Cumulative</u> ‘201 patent</p>	<p>“read/write integrated chip and an associated antenna” –</p> <p>“[O]ne skilled in the art would have understood what kind of chips would have been useful for the manufacture of cards.” (Sharinn Ex. 7, Office Action mailed 12/6/00, <u>see</u> OCS_C_045446-58).</p> <p>“read/write integrated chip and an associated antenna” – Sharinn Ex. 10, OS6B at 4, <u>see</u> text under heading “Machine Reading Applications”.</p> <p><u>Cumulative</u> Sharinn Ex. 6 and Ex. 24, JP ‘214, reference numerals 11 and 12, Figs. 1-3.</p> <p><u>Cumulative</u> Sharinn Ex. 13, ‘201 patent, reference numerals 201 and 202, Figs. 2A-2F and col. 1, lines 50-51 (“Smart Cards are used with a reader/writer that includes an interface (‘external interface’) that is used to transmit information to or from the Smart Card.”).</p>
<p>19. The process according to claim 1, wherein said core is heated in step (c)(ii).</p>	<p>1987 Oakwood Sales Brochure</p>	<p>“core is heated in step (c)(ii)” – “P.V.C. Temp.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).</p>
<p>20. A process for incorporating at least one electronic element in the manufacture of a plastic card, comprising the steps of:</p>	<p>JP ‘214</p>	<p>“electronic element” –</p> <p>“Japanese Patent ‘214 taught a process for forming a smart card which included the steps of laminating with heat and pressure an assembly which included an IC chip 11 and a thin coil 12 (an antenna).” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office</p>

	1987 Oakwood Series 6 Brochure	Action mailed 5/8/02, <u>see</u> OCS_C_045482-91). “electronic element” – inductive codings or microchip (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration and text under heading “Machine Reading Applications”).
(a) providing first and second plastic core sheets;	JP ‘214	“first and second plastic core sheets” – “The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 5/8/02, <u>see</u> OCS_C_045482-91).
	1987 Oakwood Series 6 Brochure	“first and second plastic core sheets” - second opaque plastic layer and substrate beneath inductive codings (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
(b) positioning said at least one electronic element in the absence of a non-electronic carrier directly between said first and second plastic core sheets to form a core, said plastic core sheets defining a pair of inner and outer surfaces of said core;	JP ‘214	“positioning ...” – “The IC chip 11 and antenna 12 were disposed unsupported between plastic films 14.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 5/8/02, <u>see</u> OCS_C_045482-91).
	1987 Oakwood Series 6 Brochure	“positioning ...” – inductive codings are illustrated as being positioned between second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“in the absence of a non-electronic carrier” – inductive codings are illustrated with no protection (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series	“directly” – inductive codings

	6 Brochure	are in immediate physical contact with second opaque plastic layer and substrate (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“core” – second opaque plastic layer, inductive codings and substrate form the “core” (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
	1987 Oakwood Series 6 Brochure	“a pair of inner and outer surfaces of said core” – outside surface of second opaque plastic layer and outside surface of substrate are illustrated (Sharinn Ex. 10, OS6B at 4, <u>see</u> illustration).
<i>(c) positioning said core in a laminator apparatus, and subjecting said core to a heat and pressure cycle, said heat and pressure cycle comprising the steps of:</i>	JP ‘214	“positioning said core in a laminator apparatus ...” – “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 5/8/02, <u>see</u> OCS_C_045482-91).
	1987 Oakwood Series 6 Brochure	“positioning said core in a laminator apparatus ...” – second opaque plastic layer, inductive codings and substrate can be positioned in the Series 6 laminator: “Many of the more sophisticated cards are made possible due only to the flexibility of the heat and pressure system which is a major feature of the Series 6 Laminators.” (Sharinn Ex. 10, OS6B at 3, 4 <u>see</u> illustration).
	1987 Oakwood Series	“heat and pressure cycle” –

	6 Brochure	“[h]eat and pressure are applied” to second opaque plastic layer, inductive codings and substrate (Sharinn Ex. 10, OS6B at 3).
(i) heating said core for a first period of time;	JP ‘214 1987 Oakwood Sales Brochure	“heating said core for a first period of time” – “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 5/8/02, see OCS_C_045482-91). “heating said core for a first period of time” – “P.V.C. Temp.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, see diagram).
(ii) applying a first pressure to said core for a second period of time such that said at least one electronic element is encapsulated by said core:	JP ‘214 1987 Oakwood Sales Brochure	“applying a first pressure ... for a second period of time” – “The assembly was disposed in a press and heat and pressure were applied in order to laminate the layers together to form the smart card.” (Sharinn Ex. 6 and Ex. 24, JP ‘214; Sharinn Ex. 7, Office Action mailed 5/8/02, see OCS_C_045482-91). “applying a first pressure ... for a second period of time” – “P.V.C. Press.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, see diagram).
(iii) cooling said core while applying a second pressure to said core, the second pressure being at least 10% greater than the first pressure.	UK ‘610 UK ‘283	“cooling ... while applying a second pressure” – “Subsequent to the application of this heat and pressure, the pressure was maintained while

		<p>the card was allowed to cool in the press, see page 11, line 16- p. 12, line 12. The reference made clear that in order to avoid damaging the integrated circuit which was being encapsulated that one would have heated the assembly, then applied heat and pressure to the assembly in the press and then cooled the assembly while pressure was maintained. Clearly, one viewing the same would have understood the heat and pressure as well as cooling under pressure would have been performed when laminating the card with the integrated circuit therein.” (Sharinn Ex. 18, UK ‘610; Sharinn Ex. 7, Office Action mailed 5/8/02, see OCS_C_045482-91); “While it is believed that the reference to UK ‘610 suggested that one would have ramped up the pressure during the laminating operation, to further evidence that the highest amount of pressure would have been applied when the assembly was cooled, the reference to UK ‘283 is cited. UK ‘283 is manufacturing an integrated circuit card where the assembled layers (which included thin plastic layers which had printing on the layers as well as in integrated circuit therein) were laminated together in a press. The reference taught that the press would have been preheated, the pressure applied and then the assembly removed or the assembly would have been</p>
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		<p>preheated and the pressure applied in steps with the highest pressure applied while the assembly was being cooled in the press, see page 11, lines 3-13.” (Sharrin Ex. 20, UK ‘283; Sharinn Ex. 7, Office Action mailed 5/8/02, <u>see</u> OCS_C_045482-91).</p>
	1987 Oakwood Sales Brochure	<p>“cooling ... while applying a second pressure” – “P.V.C. Temp.” and “P.V.C. Press.” curves of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).</p>
	1987 Oakwood Sales Brochure	<p>“said second pressure being at least 10% greater than said first pressure” – “P.V.C. Press.” curve of the “Typical Lamination Cycles” diagram (Sharinn Ex. 11, OSB at 6, <u>see</u> diagram).</p>
<p>21. <i>The process according to claims 20, further comprising: forming a cavity in said core.</i></p>	‘201 patent	<p>“forming a cavity in said core” – Examiner repeated argument from previous Office Action: “Regarding claim[21] see the discussion on paper no. 5 for the formation of cards.” (Sharinn Ex. 7, Office Action mailed 5/8/02, <u>see</u> OCS_C_045482-91).</p> <p>“forming a cavity in said core” – “forming holes through the main body of the card, the holes extending between the respective electrical contacts of the devices.” (Sharinn Ex. 13, ‘201 patent, col. 2, lines 27-30); “The contact holes 203b and cavity hole 203a can be formed . . . by, for instance, . . . milling.” (Sharinn Ex. 13, ‘201</p>

		patent, col. 7, lines 10-16).
22. <i>The process according to claim 21, wherein the step of forming a cavity in said core comprises: after step (c), milling a region of said core to a controlled depth so as to form a cavity which exposes at least one contact pad of said at least one electronic element.</i>	'201 patent	<p>“milling a region of said core to a controlled depth . . . to form a cavity which exposes . . . one contact pad of . . . one electronic device” – Examiner repeated argument from previous Office Action: “Regarding claim[22] see the discussion on paper no. 5 for the formation of cards.” (Sharinn Ex. 7, Office Action mailed 5/8/02, see OCS_C_045482-91).</p> <p>“milling a region of said core to a controlled depth . . . to form a cavity which exposes . . . one contact pad of . . . one electronic device” – “electrical interconnection has been made by forming holes through the main body of the card, the holes extending between the respective electrical contacts of the devices.” (Sharinn Ex. 13, '201 patent, col. 2, lines 27-30); “The contact holes 203b and cavity hole 203a can be formed . . . by, for instance, . . . milling.” (Sharinn Ex. 13, '201 patent, col. 7, lines 10-16).</p>
23. <i>The process according to claim 22, further comprising: inserting a second electronic element into said cavity, the second electronic element being in electrical communication with the at least one electronic element.</i>	'201 patent	<p>“inserting a second electronic element into said cavity, the second electronic element being in electrical communication with the at least one electronic element” – “electrically conductive plugs 205 inserted into contact holes 203b . . .” (Sharinn Ex. 13, '201 patent, col. 7, lines 45-59, and Figs. 2J, 2K and 2L, items 203b and 205).</p>